

DRAFT Water Quality Questionnaire

v. August 5, 2016

DELTA INDEPENDENT SCIENCE BOARD

REVIEW OF SCIENCE AND INFORMATION USED IN ASSESSING WATER QUALITY AND IN MAKING MANAGEMENT DECISIONS ABOUT WATER QUALITY IN THE DELTA

The Delta Reform Act of 2009 charges the Delta Independent Science Board (Delta ISB) with providing "oversight of the scientific research, monitoring, and assessment programs that support adaptive management of the Delta through periodic reviews of each of those programs" so that "all Delta scientific research, monitoring, and assessment programs are reviewed at least once every four years" (§85280 (a)3)). Rather than reviewing programs individually, we are reviewing them by theme. The review process includes several approaches and mechanisms to gather information from entities engaged in collecting and/or using water quality information, including panel presentations, a questionnaire, interviews, and review of relevant documents. This questionnaire is the second stage of our review of the science underpinning the management of water quality in the Delta.

If you are unfamiliar with this review, the final prospectus can be found at <http://deltacouncil.ca.gov/science-board/delta-isb-products>.

We want our review to be as constructive and helpful to entities addressing the water quality issues in the Delta. In some cases, we will follow up with in-person interviews. We anticipate that it will take 30 to 45 minutes to complete this questionnaire. If you cannot complete it, but you would be willing to participate in an interview, please contact Annie Adelson (annie.adelson@deltacouncil.ca.gov).

After reporting our findings, we will explain any recommendations that are included in the report, and suggest paths for implementation. Throughout the process, respondents and interviewees will be assured of confidentiality. Responses will not be identified by an individual nor by their entity (agency, division, program, or other).

Managing water quality in a system as complex as the Delta is not easy or straightforward. By considering the following questions and providing brief responses, you'll help us suggest ways in which science can be better used in assessing water quality in the Delta and in informing management actions to best protect and improve water quality. The questionnaire has three parts. **Please provide links to or copies of documents that you think would be useful to us in reviewing science in support of water quality in the Delta.**

It would be most helpful if you could return the completed questionnaire to **Annie Adelson** (Annie.Adelson@deltacouncil.ca.gov) by August xx, 2016. **PLEASE NOTE THAT THIS WILL CHANGE IF WE USE AN ONLINE SURVEY APPROACH**

I. A QUICK SURVEY

Our goal is to develop an understanding of how water quality is currently viewed and managed in the Delta. For this review, the Delta ISB is not considering salinity, temperature, or dissolved oxygen, because the scientific understanding of these attributes has a strong basis already. For this review, we are focusing on chemical contaminants (including mercury, methylmercury, selenium, and pesticides, as well as other chemical contaminants such as pharmaceuticals, personal care products, and contaminants of emerging concern), nutrients, and drinking water constituents of concern. Please keep these attributes in mind as you consider the following questions.

Assign a value from 1 (strongly disagree) to (5 strongly agree) to each of the following statements. Following the statements there is an opportunity for more detailed answers, and there is also a short set of separate questions following this section.

I'm responding for (name of entity) _____. The entity is an agency, division, program, or other (please specify).

1. The water quality parameters currently being measured in the Delta are the most important ones, and few if any additional measures are needed.

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ [Check one]

If you think additional parameters are needed, please list them here. Or, if you think fewer parameters are needed please describe which you think are superfluous. [Click here to enter text.](#)

2. The spatial and temporal scales at which water quality is being measured are appropriate for supporting management decisions.

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ [Check one]

If spatial and temporal scales are not adequate to support management decisions, please describe what parameters need to be measured at higher resolution. [Click here to enter text.](#) Conversely, if you think some parameters are being measured at higher density and/or frequency than needed, please say what those parameters are here and how they should be modified. [Click here to enter text.](#)

3. Water quality in the Delta currently is sufficient to support the recovery of species listed as threatened or endangered under the Endangered Species Act.

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ [Check one]

If some aspects of water quality are hindering recovery, or are not sufficiently understood to determine if they might be hindering recovery of threatened or endangered species, please describe those aspects here. [Click here to enter text.](#)

4. Water quality in the Delta is sufficient to support overall ecosystem recovery, including important ecosystem functions.

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ [Check one]

If some aspects of water quality are hindering recovery, or are not sufficiently understood to determine if they might be hindering recovery, please describe those aspects here. [Click here to enter text.](#)

5. Water quality data are readily shared between entities.

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ [Check one]

If you feel that data sharing could be improved, please give suggestions, using specific examples if possible. [Click here to enter text.](#)

6. There is considerable duplication of effort in water quality monitoring in the Delta.

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ [Check one]

If you know of water quality monitoring efforts that duplicate others, or where efficiencies could be found, please suggest those here. [Click here to enter text.](#)

7. Water quality entities in the Delta collaborate on site selection.

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ [Check one]

8. Information obtained from compliance monitoring is being used in decision-making processes in the Delta.

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ [Check one]

9. There is integration among physical, biological and chemical monitoring programs (or efforts) being conducted in the Delta.

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ [Check one]

If you disagree, please recommend ways that integration could be improved. [Click here to enter text.](#)

10. I am very familiar with the California Water Quality Monitoring Council's (CWQMC) actions in the Delta? 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ [Check one]

11. With additional resources, could the CWQMC be the best group to coordinate water quality monitoring programs?

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ [Check one]

If not, what is needed to make them even more effective? [Click here to enter text.](#)

If the CWQMC is not the best group to coordinate water quality monitoring programs, is there an entity that could better perform this function?

12. Sufficient research has been done on water quality issues in the Delta.

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ [Check one]

If you disagree, please suggest where more research and what topics on water quality are needed. [Click here to enter text.](#)

II. QUESTIONS SPECIFIC TO YOUR ENTITY

Here are a few additional questions that we'd like you to consider and to provide information about how they relate to water quality in the Delta, especially the last question.

1. Describe in broad terms whether, and how, you use an adaptive management approach in collecting water quality data and how you use it to inform management decisions.
[Click here to enter text.](#)
2. What data sources does your entity rely on to make management decisions? Does your entity collect the water quality data it requires, or does it rely on data collected by others? [Click here to enter text.](#)
3. Do you have water quality data within your entity that could be useful to other agencies but are currently not available to others who might be interested in it? If so, do you have plans to make these data available? If you plan to make these data available, how will you do it? What are the constraints in making these data available? In addition to more funding, what other resources would be most useful for enabling better data-sharing among users in the Delta? [Click here to enter text.](#)
4. If you are a manager, do you have a process for highlighting the science and research needs that would lead to improved management of water quality? Do you think that

this is an important issue? If you currently lack a process for highlighting needs, what would enable you to do this process or to do it better? [Click here to enter text.](#)

5. If you are conducting research, how are your research priorities in the area of water quality determined?
[Click here to enter text.](#)
6. If you conduct research, what key uncertainties about water quality issues need to be investigated further, or what new research needs to be initiated? [Click here to enter text.](#)
7. What question(s) should we have asked but didn't? Also, your answer to any additional question(s) would be helpful!
[Click here to enter text.](#)

III. Needs of your entity.

Please indicate in terms of relative importance (1 most important, 5 least important) if and how each of the issues below are part of the activities of your entity.

Ecosystem Health

- ☐ Focus on water quality to support ecosystem health
- ☐ Assess the nature and extent of pollution control needed in different water bodies
- ☐ Understand the environmental fate of different pollutants
- ☐ Understand the relationships among water quality and the natural landscape, hydrological processes, the subsurface, and the human activities that take place on the landscape within watersheds
- ☐ Early warning of accidental pollution events
- ☐ Other(s)—please list and score

Trends in Water Quality

- ☐ Monitoring trends over long time scales, taking care to place measurements in a historical and hydrological context
- ☐ Determine trends in the quality of the aquatic environment, and how the environment is affected by the release of contaminants, by other human activities, and/or by waste treatment operations, often known as "impact monitoring"
- ☐ Other(s)—please list and score

Decision-Making

- ☐ Enable assessments of the current state of water quantity and quality, and its variability in space and time
- ☐ Develop composite indexes to assess source water quality across a range of inland water types, globally and over time
- ☐ Support decision-making and operational water management in critical situations

- ☐ Provide the basis for science-based environmental policies, and conduct evaluations of whether a policy has resulted in the desired effect and been cost-effective
- ☐ Identify management and policy information needs, and rational planning for pollution-control strategies and their prioritization
- ☐ Establish water-quality standards
- ☐ Respond to unexpected problems and emerging issues
- ☐ Other(s)—please list and score

Outcomes

- ☐ Evaluate effectiveness of pollution-control, water management, and remedial measures
- ☐ Advance from monitoring to prediction and applying the understanding of the hydrological system and water-quality conditions to non-monitored, yet comparable areas
- ☐ Obtain reliable and timely data, and reporting
- ☐ Define data and information needs, and subsequent design of the monitoring network to meet them
- ☐ Other(s)—please list and score

Technical Development, Coordination, and Improvement

- ☐ Assess assimilative capacity of a water body, thereby reducing costs of pollution control
- ☐ Advance monitoring technology, such as that for measuring water quality in real-time
- ☐ Coordinate activities among organizations involved in water, sanitation, and ecosystems and human health
- ☐ Strengthen existing network infrastructure and institutions rather than creating new ones
- ☐ Build capacity and empowerment among different entities
- ☐ Determine adequate number of monitoring stations and their strategic locations to result in an accurate and reliable basin coverage
- ☐ Promote free access to information
- ☐ Calibrate interoperability and comparability of methods
- ☐ Keep systems up-to-date (IT, analytical etc.) for data sharing
- ☐ Other(s)—please list and score

How would you describe the activities of your entity? Please mark each of the following as **major**, **minor**, or **no** activity.

- ☐ Compliance
- ☐ Fixing problems and /or responding to crises
- ☐ Measuring contaminants to understand ecosystem impacts
- ☐ Establishing reference or baseline conditions
- ☐ Evaluating data or information from other entities
- ☐ Other(s)—please list and score

Thank you for your assistance in our evaluation of water quality issues in the Delta.
The Delta Independent Science Board